

**Remarks**

Claims 1, 4, and 5 having been amended, claim 2 having been canceled, and claims 30-34 having been added, the pending claims are claims 1 and 3-34. Reconsideration and withdrawal of the rejections are respectfully requested.

Claims 9, 10, and 18 have been rewritten in independent form.

Claim 1 has been amended to incorporate language of claim 2, now canceled. Correspondingly, claims 4 and 5 have been amended to depend from claim 1. Claim 1 has further been amended to recite that the reactive diluent comprises at least one methacrylate compound, which is supported by the specification at, for example, page 7, lines 12-16.

Claim 4 has also been amended to correct a typographical error.

New claims 30-32 are supported by the specification at, for example, page 7, lines 6-16. New claims 33-34 are supported by the specification at, for example, page 8, lines 10-16.

**Section V. Novelty, Inventive Step, or Industrial Applicability**

Claims 1-8, 11-17, and 19-29 were deemed by the Examining Authority to lack novelty under PCT Article 33(2) and inventive step under PCT Article 33(3). The documents cited by the Examining Authority in support of this determination were:

U.S. Pat. No. 5,908,902 (Pfeil et al.)

U.S. Pat. No. 5,932,636 (Neumann et al.)

U.S. Pat. No. 6, 201,043 (Bremser et al.)

**Pfeil et al.**

The Examining Authority is of the opinion that claims 1, 3, 6, 11-14, 16-17, and 19-29 lack novelty under PCT Article 33(2) as being anticipated by Pfeil et al. Claim 1 having been amended, Applicant respectfully traverses the rejection.

Pfeil et al. disclose "self-emulsifying epoxy resins that are useful in dispersions" (column 1, lines 7-8). Pfeil et al. state that "[i]n order to prepare the dispersions according to the

invention, the epoxy resin (A) can first be prepared by condensation of components (A-1) and (A-2) and, if desired, (A-3) with (A4) at elevated temperatures, in general from 100 to 220° C., preferably from 150 to 180° C., in the presence of a catalyst which accelerates the condensation. . . . The entire quantity of the optional diluent (C) can be added at once prior to dispersing, thus acting as a viscosity reducer and facilitating dispersion, or, in the case of a relatively large quantity, it can be present in part during the dispersion operation, with the remainder being added after dispersion, for example continuously during the emulsion polymerization of component (C-2)" (column 13, lines 13-38). In short, Pfeil et al. disclose forming a condensation product by combining modifying compound A-3, which can be an amine compound (e.g., column 7, lines 31-50), with epoxide compound A-1; and adding optional diluent C prior to dispersing.

However, Pfeil et al. fail to disclose or suggest, among other things, combining an amine and an epoxy material *in the presence of a reactive diluent*, as recited in claim 1 (as amended). Thus, Applicant respectfully submits that claims 1, 3, 6, 11-14, 16-17, and 19-29 are novel over Pfeil et al.

Neumann et al.

The Examining Authority is of the opinion that claims 1-6, 11-15, 17, 19-22, and 25-29 lack novelty under PCT Article 33(2) as being anticipated by Neumann et al. Claim 1 having been amended, Applicant respectfully traverses the rejection.

Neumann et al. disclose "[a] process for preparing an aqueous synthetic resin dispersion comprising preparing an ionic resin (A) containing moieties derived from aralkylated epoxy resins from a bisphenol substituted with at least one aralkyl group, in the presence of olefinically unsaturated monomers" (column 14, lines 5-10; i.e., claim 1). Ionic resin (A) may be "an ionic epoxy or epoxy-amine resin" (column 2, lines 64-65). "Suitable unsaturated monomers used to form polymer (C), . . . may *already be present during the synthesis of the amino-epoxy resin* or else *during the synthesis of the blocked isocyanate* or are *added after the synthesis thereof*" (column 9, lines 54-57). Neumann et al. specifically disclose the preparation

of an epoxy-amine adduct in the presence of styrene (column 12, lines 22-35). However, they fail to specifically disclose, among other things, combining an amine and an epoxy material *in the presence of a reactive diluent*, wherein *the reactive diluent comprises at least one methacrylate compound*, as recited in claim 1 (as amended).

Thus, Applicant respectfully submits that claims 1-6, 11-15, 17, 19-22, and 25-29 (as amended) are novel over Neumann et al.

Further, Applicant respectfully submits that Neumann et al. provides insufficient guidance for one of skill in the art to combine an amine and an epoxy material in the presence of a reactive diluent, wherein *the reactive diluent is selected to include at least one methacrylate compound*. Neumann et al. list suitable unsaturated monomers including "vinyl monomers: aromatic vinyl compounds such as styrene, methylstyrenes, and halostyrenes; vinyl ethers; vinyl esters of aliphatic monocarboxylic acids having 2 to 18 carbon atoms, such as vinyl acetate, vinyl propionate and vinyl stearate; esters of  $\alpha,\beta$ -unsaturated acids such as alkyl (meth)acrylates, alkyl fumarates, alkyl maleates having 1 to 12 carbon atoms in the alkyl group; monoesters of  $\alpha,\beta$ -unsaturated acids with polyhydric alcohols, such as hydroxyalkyl (meth)acrylates, hydroxyalkyl crotonates having 2 to 12 carbon atoms and from one to three free hydroxyl groups in the alcohol group, such as hydroxyethyl and hydroxypropyl (meth)acrylate, neopentylglycol mono(meth)acrylate, trimethylolpropane mono (meth) acrylate and pentaerythritol mono(meth)acrylate, and also mixtures of the above-mentioned vinyl monomers" (column 9, line 58 to column 10, line 6). In short, Neumann et al. list a genus of unsaturated monomers including five subgenera (e.g., vinyl monomers, aromatic vinyl compounds, vinyl ethers, vinyl esters, and esters of  $\alpha,\beta$ -unsaturated acids), and the subgenera of  $\alpha,\beta$ -unsaturated acids includes four species (e.g., acrylates, methacrylates, fumarates, and maleates).

Although Neumann et al. state that "[p]reference is given to the use of acrylic or methacrylic esters of monoalcohols which contain 1 to 18 carbon atoms, preferably n-butyl methacrylate, methyl methacrylate, isobutyl acrylate, 2-ethylhexyl acrylate and, in particular, butyl acrylate" (column 10, lines 7-11), Applicant respectfully submits that Neumann et al. do not clearly teach that the preference is for monomers *already present during the synthesis of the*

*amino-epoxy resin*, rather than for monomers added *during the synthesis of the blocked isocyanate* or added *after the synthesis thereof*. Notably, Neumann et al. provide no guidance for one of skill in the art to select methacrylate monomers over acrylate monomers.

Indeed, Applicant respectfully submits that when combining an amine and an epoxy material in the presence of a reactive diluent (e.g., claim 1, as amended), *acrylate* compounds are not preferred as reactive diluents. The present specification states that "[p]referred reactive diluents include vinyl compounds, *methacrylate* compounds, and combinations thereof" (page 7, lines 7-8). Moreover, the present specification states that "[a]s used herein, "reactive diluent" refers to monomers and/or oligomers that are substantially non-reactive with the epoxy material and/or amine under the conditions used to prepare the epoxy-amine material" (page 6, lines 29-31). Applicant respectfully submits that acrylate monomers may be reactive in the presence of an amine and an epoxy material. Thus, Neumann et al. has failed to provide guidance for one of skill in the art to combine an amine and an epoxy material in the presence of a reactive diluent, wherein *the reactive diluent is selected to include at least one methacrylate compound*.

In view of the remarks presented herein above, Applicant respectfully submits that claims 1-6, 11-15, 17, 19-22, and 25-29 (as amended) offer an inventive step over Neumann et al.

*Bremser et al.*

The Examining Authority is of the opinion that claims 1, 6-8, 19-21, 25-26, and 29 lack novelty under PCT Article 33(2) as being anticipated by Bremser et al. Claim 1 having been amended, Applicant respectfully traverses the rejection.

Bremser et al. disclose aqueous dispersions "obtainable by polymerizing an ethylenically unsaturated monomer or a mixture of ethylenically unsaturated monomers [sic] in an aqueous solution of an at least partially protonated epoxide-amine adduct" (Abstract).

However, Bremser et al. fail to disclose or suggest, among other things, combining an amine and an epoxy material *in the presence of a reactive diluent*, as recited in

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claim 1 (as amended). Thus, Applicant respectfully submits that claims 1, 6-8, 19-21, 25-26, and 29 are novel over Bremser et al.

**Summary**

Applicant respectfully submits that all the pending claims, as amended, are novel in respect to the above documents, and that furthermore, the above documents neither teach nor suggest Applicant's invention as claimed. Please contact the undersigned attorney if any additional assistance is required.

Respectfully submitted,  
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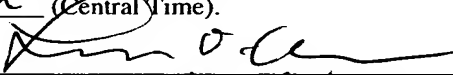
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**CERTIFICATE UNDER 37 CFR §1.8:**

The undersigned hereby certifies that the Transmittal Letter and the paper(s), as described hereinabove, are being transmitted by facsimile in accordance with 37 CFR §1.6(d) to the Patent and Trademark Office, addressed to Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450, on this 5th day of APRIL, 2004, at 6:37 pm (Central Time).

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